

Claims

- [c1] On a service vehicle having a means for attaching to a towing vehicle and a means for attaching to an article, an attachment warning apparatus, comprising:
 - a source of electric power;
 - an alarm;
 - means for detecting attachment of the service vehicle to the towing vehicle;
 - means for detecting attachment of the service vehicle to the article; and
 - means for actuating the alarm when both the towing vehicle detection means detects a towing vehicle and the article detection means detects an article.
- [c2] The attachment warning apparatus of claim 1, wherein:
 - said towing vehicle detection means further comprises a first switch mounted on said towing vehicle attachment means;
 - said article detection means comprises a second switch mounted on a receiver for said article attachment means, the receiver being mounted on said service vehicle; and
 - said means for actuating said alarm comprises an electric circuit containing said source of electric power con-

nected in series with said alarm, the first switch, and the second switch.

- [c3] The attachment warning apparatus of claim 2, wherein:
 - said first switch is normally closed and is opened when said towing vehicle attachment means is detached from said towing vehicle;
 - said second switch is normally closed and is opened when said article attachment means is attached to said receiver.
- [c4] The attachment warning apparatus of claim 3, wherein:
 - said service vehicle is an aircraft ground power unit;
 - said article is an aircraft;
 - said towing vehicle attachment means is a towbar, the towbar being in a first position when attached to said towing vehicle and in a second position when not attached to said towing vehicle, said first switch being opened by the towbar in the second position;
 - said article attachment means is a ground power unit plug; and
 - said receiver is a holster shaped to accept the plug and having said second switch affixed thereto so that said second switch is opened by the plug inserted into the holster.
- [c5] The attachment warning apparatus of claim 4, wherein:

said alarm is an electric light and an electric horn connected in parallel to each other.

- [c6] The attachment warning apparatus of claim 5, wherein:
said electric light is a strobe light.
- [c7] On an aircraft ground power unit having a towbar; a battery, an umbilical cord, and an aircraft attachment plug on the end of the umbilical cord, an apparatus for alarming the simultaneous connection of the towbar to a towing vehicle and the plug to an aircraft, comprising;
a first switch affixed to the ground power unit in an orientation that opens the switch when the towbar is not connected to the towing vehicle;
a holster affixed to the ground power unit, the holster having a cavity, the cavity having internal walls and shaped to hold the plug when it is not attached to the aircraft;
a second switch affixed to the holster through one of the internal walls in an orientation that opens the second switch when the plug is inserted into the cavity; and
an alarm wired in series with the battery, the first switch, and the second switch, the alarm consisting of either:
 - a) a light,
 - b) a horn, or
 - c) both a light and a horn.

[c8] A service vehicle capable of being towed, comprising:
means for attachment to a towing vehicle;
means for attachment to an article being serviced;
a source of electric power;
an alarm;
means for detecting attachment of the service vehicle to
the towing vehicle;
means for detecting attachment of the service vehicle to
the article; and
means for actuating the alarm when both the towing ve-
hicle detection means detects a towing vehicle and the
article detection means detects an article.

[c9] The service vehicle of claim 8, wherein:
said towing vehicle detection means further comprises a
first switch mounted on said towing vehicle attachment
means;
said article detection means comprises a second switch
mounted on a receiver for said article attachment means,
the receiver being mounted on the service vehicle; and
said means for actuating said alarm comprises an elec-
tric circuit containing said source of electric power con-
nected in series with said alarm, the first switch, and the
second switch.

[c10] The service vehicle of claim 9, wherein:
said first switch is normally closed and is opened when

said towing vehicle attachment means is detached from said towing vehicle;
said second switch is normally closed and is opened when said article attachment means is attached to said receiver.

[c11] The service vehicle of claim 10, wherein:
the service vehicle is an aircraft ground power unit;
said article is an aircraft;
said towing vehicle attachment means is a towbar, the towbar being in a horizontal position when attached to said towing vehicle and in a vertical position when not attached to said towing vehicle, said first switch being opened by the towbar in the vertical position;
said article attachment means is a ground power unit plug; and
said receiver is a holster shaped to accept the plug and having said second switch affixed thereto so that said second switch is opened by the plug inserted into the holster.

[c12] The service vehicle of claim 11, wherein:
said alarm is an electric light and an electric horn connected in parallel.

[c13] The service vehicle of claim 12, wherein:
said electric light is a strobe light.

[c14] An aircraft ground power unit capable of being towed by a towing vehicle, the ground power unit having a towbar; a battery, an umbilical cord, and an aircraft attachment plug on the end of the umbilical cord, the ground power unit further comprising;

 a first switch affixed to the ground power unit in an orientation that opens the switch when the towbar is not connected to the towing vehicle;

 a holster affixed to the ground power unit, the holster having a cavity, the cavity having internal walls and shaped to hold the plug when it is not attached to the aircraft;

 a second switch affixed to the holster through one of the internal walls in an orientation that opens the second switch when the plug is inserted into the cavity; and

 an alarm wired in series with the battery, the first switch, and the second switch, the alarm consisting of either:

- a light,
- a horn, or
- both a light and a horn.